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\$175,000, will be dedicated during "Farmers' Day" at the college on May 30.

THE contract has been let for the construction of a new fireproof chemistry building at the Montana State College, Bozeman. This building replaces the one destroyed by fire in October, 1916. The building will cost \$110,000, exclusive of furniture and is 130 X 60. This forms a unit of a larger building plan to be developed as the institution grows. The building will furnish quarters for the experiment station and college departments of chemistry as well as quarters for the state food and water laboratories.

DR. A. E. KENNELLY, professor of electrical engineering at the Massachusetts Institute of Technology, has been appointed acting head of the electrical engineering department of the institute during the absence of Professor Jackson, who has been commissioned a major.

AT the Harvard Medical School three members of the medical faculty have been promoted to full professorships as follows: Dr. Richard C. Cabot, clinical professor of medicine; Dr. Eugene A. Crockett, Le Compt professor of otology, and Dr. F. S. Newell, clinical professor of obstetrics.

LESTER F. WEEKS, assistant professor of chemistry in the University of Maine, has been appointed assistant professor of chemistry at Colby College to succeed Dr. Robert G. Caswell, who has resigned.

AT Wellesley College, Lincoln W. Riddle, associate professor of botany, William Skarstrom, associate professor of hygiene, and Roxana Hayward Vivian, associate professor of mathematics, have been appointed to full professorships.

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#### DISCUSSION AND CORRESPONDENCE WALNUT POLLEN AS A CAUSE OF HAY FEVER

THE prevalent assumption that the tree pollens play only a minor rôle, if any, as causative factors in hay fever must now be abandoned, since one species alone has been demonstrated to be the cause of hundreds if not indeed thousands of cases in California.

The spring type of this malady is very

troublesome in the Sacramento valley, where it has been commonly attributed, even by physicians, to locust and to orange pollen. However, predictions based upon botanical characters that these pollens would give negative results were thoroughly substantiated by intradermal tests in which the pollen extracts were used. At the request of Dr. Grant Selfridge, of San Francisco, the writer therefore visited the city of Colusa in April, 1917, to determine, if possible, the specific cause or causes of the trouble. It was noted that the native California black walnut (*Juglans californica* var. *Hindsii* Jepson) was much used as a street tree, that the abundant pollen sifted down over the city just at the time when the disease was most prevalent, and that the disease disappeared soon after the close of the flowering period. It was also learned that when patients left the region temporarily to escape the disease they were free from the symptoms, except when passing through towns where the black walnut grew. Finally, the botanical characters of the pollen were exactly those which one would expect in a hay-fever plant. Since this evidence all pointed to the walnut as probably the chief offender, samples of the pollen were gathered and biological tests were made by Dr. Selfridge on some eight subjects. In each case the results were positive.

Twelve hay-fever subjects were also examined at Chico, a neighboring city, where cases are abundant during the spring and where the walnut is much grown as an ornamental tree. In every case positive reactions were obtained with extracts prepared from the California black walnut pollen, whereas the controls gave no reactions. Other pollen extracts gave results in a few cases, indicating that the subjects were sensitive to these also. This was especially true of western mugwort (*Artemesia heterophylla*) which is a common cause of the fall type. The intradermal tests were verified by direct application to the nostrils, and the well-known symptoms of hay fever were immediately produced in each case.

The treatment of numerous hay-fever subjects in the Sacramento and neighboring val-

leys to render them immune to hay fever is now under way and the serums prepared from the black walnut pollen are the ones most used. It is expected that by this means the spring type of the malady can be largely eliminated in those districts. A more direct method would be to remove the trees, or, better yet, to graft the tops over to English walnut, which rarely, if ever, causes hay fever. By this latter method the beautiful and stately trees along the highways and in the parks could be preserved, but it would doubtless be difficult to bring about unanimity of action.

The relation of the eastern black walnut to hay fever should now be determined since that species is closely related botanically to our western form. It may also be pointed out that perhaps the most significant result of our studies, which cover the region from the Rocky Mountains west, is the discovery that hay fever is here produced by an almost entirely different flora from that which causes it in the eastern states and in Europe, and that the exact species involved must be determined in each case before treatment for immunity is undertaken. Botanical surveys and clinical tests have been carried on by Dr. Selfridge and the writer in order to determine the most important species for each district and these will be continued as opportunity offers.

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#### THE CANONS OF COMPARATIVE ANATOMY

IN a recent number of this journal<sup>1</sup> Professor E. C. Jeffrey uses "an article on the vessels of *Gnetum* in the January number of the *Botanical Gazette*" as a "flattering testimonial" to the soundness of what he has called the canons of comparative anatomy and at the same time (to modify his pun) as an illustration of poor marksmanship in the use of those canons. As the author of that article and as a firm supporter of those canons, I am glad to offer my work as a testimonial to their soundness and to their effectiveness in anatomical offensives. But, according to Profes-

sor Jeffrey, my marksmanship was defective because I stated—and in so doing showed "surprising ignorance"—that the vessels of *Gnetum* are different from those of angiosperms. Aside from the fact that this statement does not involve the use of the canons at all, the whole theme of the article was that the *same* type of vessel has been evolved in *Gnetales* and angiosperms in entirely different ways. On page 90 for example I wrote:

The possession of vessels by the two groups . . . is to be used as a remarkable illustration of development by different plants of the *same* highly specialized structure.

Again on page 89 after speaking of the perforation of the Gnetalean vessel I said:

We have also seen that the similar single large perforation of the angiosperm vessel, etc. Professor Jeffrey seems to have misunderstood what was in my mind because of my statement that the vessel of *Gnetum* is like the *highest* angiosperm type except that as a rule it exhibits a narrow border. Yet every anatomist will agree that this statement is absolutely correct because the *highest* type of angiospermic vessel *has no* border on its perforations. Of course every anatomist knows that the perforations of many angiospermic vessels do show a border as do those of *Gnetum*, but these are not of the highest type.

It appears, therefore that our modern scientific promulgator of canons is in certain respects remarkably like his ecclesiastical predecessors.

W. P. THOMPSON

#### ALBINO TURKEY BUZZARDS

IN a recent issue of SCIENCE<sup>1</sup> there appeared an interesting note on the supposed occurrence of albino turkey buzzards (*Cathartes aura aura*) in Mexico, to which Mr. E. W. Nelson has called the writer's attention. This was based on the account of white "Carrión Crows" given by Captain William Dampier in his "First Voyage to the Bay of Campeachy." That Dampier mentions these white birds as of more or less common occurrence in that locality at once raises a doubt of their identification as turkey buzzards; and this

<sup>1</sup> SCIENCE, N. S., Vol. XLVII., No. 1214.

1 Gudger, SCIENCE, N. S., Vol. XLVII., No. 1213, March 29, 1918, pp. 315-316.